

ROTARY SHREDDING BLADE

ABSTRACT

A brush cutter blade for efficient shredding of grasses, weeds, vines and brush and also for saw cutting of saplings and tree branches, comprising a circular saw blade member with auxiliary cutting elements projecting from the underside of the blade. Several preferred embodiments include semielliptic and rectangular structures and serrated and non-serrated cutting edges for the auxiliary cutting elements. All embodiments share outwardly sloped, substantially flat structures, circularly and symmetrically disposed, with centrally inclined base lines. This combination of structural features is enacted upon by centrifugal forces during rotation, to create an effective self-cleaning mechanism, whereby cutting debris is urged upward, outward and away from the auxiliary cutting elements. The novel mechanism completely eliminates a serious safety problem of previous designs, where unevenly weighted cutting debris clinging to the blade caused unexpected, severe vibrations and potential loss of control by the operator, with possible injury to himself or to bystanders.

Shredding performance is further improved by inclining the auxiliary cutting elements toward the blade center with their base lines, thereby gaining a moderate, but very effective raking action. Auxiliary cutting elements are made both integral and modular. Integral embodiments provide the simplicity and economy of single component construction, but modular embodiments can be cross-matched with radially cutting blades and mounted in tandem. In this way blades of different cutting aggressiveness can be joined to efficiently deal with specific field conditions. Convenient exchange of either modular blade component is also provided for reclaiming. Both integrally formed and modularly constructed blades are closely nestable for optimal handling and economy during the entire manufacturing, storage and shipping cycle. A novel and useful system of replaceable tooth structures is introduced, providing blades with potentially indefinite service life, as worn out tooth structures can be repeatedly replaced with new ones.